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CROESUS OR PSEUDO-CROESUS? HOARD OR HOAX?
PROBLEMS CONCERNING THE SIGLOI AND DOUBLE-SIGLOI
OF THE CROESEID TYPE

MARTIN PRICE

(PLATES 31-33)

The archaic coinage now unquestioningly attributed to King Croesus of Lydia (560-547 B.C.) is that bearing the obverse design of a lion forepart and bull forepart facing inwards. It is good from time to time to reflect on basic assumptions; and with great pleasure I offer the thoughts of the following pages to Leo Mildenberg who has been so warmly generous to me on many occasions. One half of the design is truly pertinent; and if the thoughts offered may seem to some unnecessarily overbold, perhaps they will be acceptable to one who appreciates the unorthodox.

The possible attribution of these coins to Croesus was first published by Mionnet in 1833, quoting a statement by L-E. Cousinery.¹ Following that, but apparently independently, H. P. Borrell of Smyrna wrote for the *Numismatic Chronicle*² a note arguing the case for such an attribution, and since that time there has been no further arguing of the case,³ although it is now accepted that a large proportion of the issues was in fact struck under Persian rule.⁴ Before 1840 these coins were usually attributed to Samos, and some believed them to have come from Acanthus in Macedonia or from Salamis in Cyprus. Borrell's arguments for his reattribution are as follows:

1. The Lydian kings are known to have had a coinage, and some gold coins were called ΚΡΟΙΣΕΙΟΙ (Croeseid).
2. The weights of the Persian sigloi and the Croeseid half staters are the same.
3. The weights of the Persian daric and of the gold Croeseid are similar.

¹ *Description de médailles antiques*, suppl. 6, 405, previously attributed in I, 460.80 to Acanthus, Macedonia.

² *NC* 1840, 216-223.

³ E.g. in the important discussions of this coinage by F. Lenormant, *Ann. Soc. Num.* 1874, 179-188, and K. Regling in *Klio* 14 (1914) 91-112.

⁴ C. M. Kraay, *Archaic and Classical Greek Coins* (Cambridge, Engl. 1976) 31. Cf. L. Breglia, *Annali della scuola normale superiore di Pisa* IV.3 (1974) 659-685.

4. Four gold staters and more than a hundred silver pieces were known to have been found within thirty miles of Sardis. No specimen was known from Samos, Macedonia, or Cyprus.
5. Fabric and style show development which Borrell believed to be consistent with a fourteen year period of issue.
6. The lion and bull have connections with Lydia.

The evidence of provenance is indeed sufficient to suggest an attribution to Sardis and may be augmented by more recent hoards and finds from the excavations at Sardis.⁵ However, Borrell can hardly be said to have proved that the coins must have been struck under Croesus. In fact his only possible argument in favour of Croesus (5) is now believed to be incorrect. Naster's study of this material⁶ showed that there are two weight standards in the gold coinage. He states that the style of the silver staters, thirds, and smaller fractions parallels that of the heavier, earlier gold, and that the silver half staters are in the main more akin to the lightweight gold. His assumption that the period of the heavy gold coinage represents Croesus' lifetime issues, and that the light coinage was struck after the Persian conquest of Lydia, is now the accepted view.⁷

The idea that the Croeseid coinage continued after the deposition of Croesus is based on the fact that half staters of this type circulated alongside sigloi of the Persians in the early fifth century B.C. in such quantity that there can be no doubt that the reform attributed to Darius, which introduced gold and silver coinage at Sardis bearing the image of the Great King, followed immediately upon issues of the lion and bull type. Borrell was aware of the similarity of fabric and technique of the two coinages. Indeed, he believed that on stylistic grounds some of the Persian coinage was even earlier than the coinage attributed to Croesus.⁸ His solution was to state that the Persian coinage was not introduced under Darius I (p. 218) but much earlier, and that the name Daric was later given to an existing Persian gold coinage. No modern scholar would follow Borrell in this. Our knowledge of the coinage of the late sixth and early fifth centuries is such that it may be stated with certainty that the earliest coinage of Persian types was struck at Sardis, and therefore after 547 B.C., and need not be placed before ca. 510 B.C. There is therefore a gap of some thirty-five years between the end of Croesus' rule and the beginning of the new Persian coinage in Lydia, a period in which some at least of the 'Croeseid' coinage must have been struck. The similarity of fabric and technique suggests that there was no significant gap between the striking of the two coinages. If Borrell

⁵ *IGCH* 1162; H. W. Bell, *Sardis XI*, 22, 223 (half stater) and 224 (sixth); T. V. Buttrey et al., *Greek . . . coins from Sardis* (Cambridge, Mass. 1981) 33, 132 (gold sixth) and 133 (silver twelfth).

⁶ *Cong. Int. Num.* 1961, 25-37 with earlier bibliography.

⁷ Kraay, *supra* n. 4, 30-31.

⁸ *NC* 1840, 219. Cf. Kraay's account of the introduction of Persian coinage, *supra* n. 4, 32.

were correct to view the 'Croeseid' coinage as short-lived, and if it continued down to c. 510 B.C., then there is little possibility of any of it having been struck under Croesus.

Naster's idea that some of the 'Croeseid' coinage was Persian must be correct. In the excavations of Bayrakli (Old Smyrna) a hoard (*IGCH* 1166) containing such half staters was found in an early fifth century B.C. context. Further, at least 475 half staters of this series were found in the Çal Dağ hoard (*IGCH* 1178) in little worn condition with 98 Persian sigloi with the half figure of the king, 537 with the king drawing the bow, and 310 with the king carrying bow and spear. They are of very similar fabric and on the same weight standard. The gold darics are in fact on a slightly heavier standard than the preceding light 'Croeseids'; but Robinson⁹ pointed to one daric of 7.87 g. in the University Museum, Philadelphia which he believed to be the equivalent of a light 'Croeseid' and therefore a linking piece between the two series. The raising of the weight of the Daric was presumably to change the previous ratio of gold to silver which in the period of the light 'Croeseid' was $13\frac{1}{3}:1$ to a more practical 13:1; but Robinson saw that the earlier ratio was again adopted early in the fifth century by raising slightly the weight of the silver sigloi. The change in the weight of one metal may therefore reflect a change either in the ratio of the metals or in the exchange rate of one metal for another, coin for coin. The earlier change in the weight of 'Croeseid' gold, a reduction from a stater of ca. 10.89 g. to a stater of ca. 8.17 g., reflects a change in the exchange rate of gold and silver coins. In the deposit in the foundations of the Apadana at Persepolis (*IGCH* 1789) it was the light standard coins of this type which represented the royal coinage of the Persian empire

Previously gold and silver were struck on the same standard so that the exchange of a coin of one metal for another of a different metal was clearly difficult if the ratio of the metals was $13\frac{1}{3}:1$; but at that same ratio one light gold piece is the equivalent of ten silver staters. Naster's arrangement in making the change of the weight standard of the gold coincide with the fall of the Lydian royal house is neat, but it is by no means necessary that it should be so. The change is far more probably to be related to the use of coinage and should be seen more as a practical measure demanded by increased use of coins in transactions. It does not follow that it should necessarily be connected with political change. Indeed, the weight of the earliest coinage of 'Croeseid' type is that used later by the Persians for their sigloi and is now universally known as "Persic." This weight standard was hardly ever used for electrum coinage, and at Sardis the lion-head electrum was struck on the Milesian standard¹⁰—a stater of a little over 14 g.

⁹ *NC* 1958, 187-9.

¹⁰ L. Weidauer, *Probleme der frühen Elektronprägung, TYPOS I* (Fribourg 1975) 22-29. The Persic weight appears to be limited to an electrum issue without type, as *BMC Miletus* no. 1.

Although it is probable that the new gold stater, at a ratio of silver to gold of $13\frac{1}{2}:1$ was considered equal in buying power to the earlier electrum stater, at a ratio of silver to electrum of 10:1, it is important to realise that the introduction of the 'Croeseid' coinage coincides with a change in the weight standard employed for coinage at Sardis and that the new standard came to have very definite Persian connotations. The new standard also continued long after the local electrum coinage had ceased. Given the evidence of this change in the weight standard and of hoards one may be permitted to ask why Borrell's attribution has held the field unchallenged for so long. The reason seems to lie in the fact that there was a gold coin which was widely known to the ancients¹¹ as a 'Croeseid', and since the lion and bull gold staters are without doubt the earliest staters of pure gold, they were good candidates for the name of 'Croeseid'. However, it must not be forgotten that even until the mid-nineteenth century all electrum coins were known as gold, and it is a fair assumption that the early electrum staters were also known to the ancients as gold. There seems to be no difficulty in interpreting the name 'Croeseid' as a generic name for the earlier electrum staters whether or not struck by Croesus himself, and we should therefore follow such evidence as there is and place the lion and bull coinage entirely in the Persian period at Sardis. It might be added that the design itself could be interpreted as the coming together of the two great civilizations.

At this point must be mentioned a recent hoard of silver staters and half staters which in the autumn of 1981 passed through London on its way to New York. It was said to have been found near Ödemiş, near the site of the ancient Hypaepa, on the other side of the Tmolus mountains from Sardis itself. The coins when first seen were all covered in a thick yellow-brown deposit of iron, the removal of which revealed thick layers of silver chloride. The story accompanied the hoard that it had been found recently in an iron vessel which had corroded and broken into fragments. This is entirely consistent with the deposits noted on the coins in London. However, three strange facts emerged on inspection of the coins from the find. Firstly there is a broad range of styles some of which parallel known styles, but some display unparallelled characteristics. Secondly, staters and half staters of similar styles were found together, although Jongkees and Naster¹² had suggested that their issue

¹¹ E.g. Pollux 3.87 and 9.84. Cf. Herodotus 1.54 where Croesus is said to give two gold staters to each citizen of Delphi. A silver twelfth stater was found at Sardis (Buttrey et al., *supra* n. 5, xx and 76, no. 133) on a floor above a burned level. This level was originally dated to the Ionian destruction of 499 B.C., but for reasons unstated there it is now thought by the excavators that this destruction might be that of the Persians in 547. Clearly the evidence of this coin is crucial and full publication of the evidence is required, together with some evidence that this destruction should be linked to a more general destruction of the city, and was not an isolated destruction of a single building.

¹² J. H. Jongkees, *Jaarbericht van det Vooraziatisch-Egyptisch Gezelschap Ex Oriente Lux*, 165-166; Naster, *supra* n. 6, 31-32.

belonged to different periods; and thirdly, no die link has been observed between any of the obverses or between the reverse punches. Unpublished varieties were also noted: on one the lion and bull are back to back, an arrangement similar to known electrum staters, but of a style that is quite different. Other coins of the hoard show the head and not the forepart of a bull. Facts such as these have led many to believe that the hoard is a gigantic hoax and that the coins are not ancient. However, in 1962 I recorded four staters from a small hoard of 'Croeseids' in Athens, recently said to have been imported from Turkey.¹³ One of these coins (PLATE 33, B) is from the same obverse die as one from the new hoard (PLATE 32, 40). Another is probably from the same obverse die (compare PLATE 31, C with PLATE 31, 13 which appears to have a bull's head rather than forepart). This group confirms that staters and half staters of this particular style did circulate together and that the new coins should be considered ancient. In an attempt to settle the question on metallurgical grounds Bank Leu AG of Zürich¹⁴ had analysed by X-ray fluorescence six staters (nos. 10, 18, 20, 58, 63, 64) and two half staters (nos. 74 and 77) from the hoard, with three comparative pieces from another source. All coins were found to contain a very high percentage of silver. The comparative coins all had measurable quantities of copper, gold, and bismuth, and small traces of iron, zinc, and lead. One of the pieces had a trace of tin, another a trace of barium. All the hoard pieces had small traces only of copper and gold. Seven hoard pieces also contained a trace of zinc; four of those seven also contained a trace of iron, and one other coin had a trace of barium and no zinc. The two conclusions to stem from these analyses are that the coins from the hoard had not all been made from the same batch of silver; but that they did appear to differ significantly from the test pieces. Further tests on other coins were done to quantify the trace elements at the British Museum Research Laboratory¹⁵ using three pieces from the Museum's collection as comparison. The results confirmed the exceptional purity of the silver:

	Silver	Copper	Gold	Lead
Stater no. 9	99.9%	0.05%	0.1%	<0.05%
Stater no. 62	99.6	0.1	0.3	<0.05
Half stater no. 65	99.9	0.05	0.1	<0.05
Stater BMC 37	99.6	0.1	0.3	<0.05
Stater BMC 38	98.6	1.0	0.4	<0.05
Half stater BMC 41	99.6	0.1	0.3	<0.05

¹³ Probably part of *IGCH* 1175. See PLATE 33, A-E and *infra* p. 220.

¹⁴ I am most grateful to S. Hurter for this information.

¹⁵ I am most grateful to M. Cowell, P. Craddock, K. Howes, and M. Tite for their cooperation in this matter.

The iron, zinc, and barium found in the Swiss examination must have been present in concentrations of less than 0.05%, and when sought in London only iron could be detected at all. Such small traces are acceptable in ancient silver. Other than that, the analyses of the coins from the hoard are consistent, and they agree in showing a purity of silver that is exceptional for ancient Greek coins. BMC 37 and BMC 41 have a composition that is identical with one of the three hoard pieces tested, and the differences in the other two are not significant. The only apparent anomaly is that the Swiss test material showed an unusually high concentration of bismuth. This is unusual in ancient Greek coins and was not present in the three British Museum pieces.¹⁶ Its presence may suggest that the three pieces chosen in Switzerland for comparison were of a different period and therefore were not a fair parallel to the hoard coins. Microscopic examination of the three hoard coins at the British Museum showed deep penetration of corrosion consistent with ancient material.

A further observation was noted. The amounts of lead found to be present were exceptionally small. This strongly suggests that the silver did not derive from lead ores, which provided the source of almost all coined silver in the ancient Greek world;¹⁷ but, as may be expected for this coinage in particular, the silver may well have been obtained by separating the silver from the gold in the natural electrum derived from the deposits in the river Pactolus. However unpalatable therefore some of the evidence from this hoard may seem to be to numismatists, the die link with an earlier hoard, the analysis of the metal, and the corroded state of the coins combine to suggest that these coins are products of the ancient world. From reports made at the time of cleaning there can be no doubt that the coins are either all genuine or all false. The whole hoard stands together, and we may therefore approach the coins on the assumption that they are ancient.

The list of coins is as follows (PLATE 31-33):

Staters

Obv.: Lion forepart leaping l. and bull head r., conjoined.

Rev.: Two incuse squares, one slightly larger than the other.

1. 10.18g.

Obv.: Lion forepart leaping r. and bull head l.

Rev.: As 1, but squares sometimes of equal size.

2. 10.16. Lion of knobbly style.

3. 9.88. As 2, but bull with two horns.

¹⁶ See *Metallurgy in Numismatics* I, 18-19. Only one coin of all those analyzed from the Asyut hoard contained a significant amount of bismuth, a stater of Salamis, Cyprus, *Price-Waggoner* no. 791.

¹⁷ See J. Dayton, *Minerals, Metals, Glazing and Man* (London 1978) 111. See also *ibid.* 82 where the separation of gold from silver is attributed to Croesus. Cf. J. Healy, *Journal of Metals* (Aug. 1978) 13.

4. 10.14. Similar to 2.
5. 10.48. Similar to 2, but hairs at back of lion's head. Small die possibly intended for a half stater.
6. 9.98. Lion more dog-like. Hairs at back of lion's head.
7. 10.41. As 6, but skull-cap of muscle on the back of the lion's head.
8. 10.09. As 1.
9. 10.43. As 1.
10. 9.66. As 1.
11. 9.94. As 1.
12. 10.21. As 1, but hairs uncertain.
13. 10.13. Similar to 12, but skull-cap simplified.
14. 10.21. As 13.
15. 10.45. As 13.
16. 10.03. As 13.
17. 10.37. Lion without skull-cap or hairs.

Obv.: Lion forepart leaping r. and bull forepart rushing l.

Rev.: As 1.

a. Fine style.

18. 10.08. Lion small, neat, and feline; bull's mouth open.
19. 10.22. As 18, but normal bull.
20. 10.29. As 19.
21. 9.95. As 19.
22. 10.16. As 19. Reverse with crosses. Bull possibly has two horns.
23. 10.20. As 19, but rough reverse and normal bull.
24. 10.30. As 19.
25. 10.26. As 19.
26. 10.20. As 19.
27. 10.32. As 19.
28. 10.32. Hairs at back of lion's head.
29. 9.92. Similar to 28, but no hairs.
30. 10.29. As 29.
31. 10.13. As 29.
32. 9.98. As 29.
33. 10.08. As 29.
34. 10.08. As 29.
35. 10.20. As 29.
36. 10.25. As 29.
37. 10.32. As 29.
38. 10.09. As 29.
39. 10.30. As 29.
40. 10.02. As 29.

41. 9.98. As 29.
 42. 10.34. As 29.
 43. 10.23. As 29.
 44. 10.26. As last, but bull of heavier proportions and with prominent dewlap.
 45. 10.29. Similar to 44, but no dewlap.
 46. 10.54. As 45.
 47. 10.20. As 45, but bull with lowered head, butting.
 48. 10.37. As 47.
- b. Coarse style.
49. 10.77.
 50. 10.53.
 51. 9.80.
 52. 10.37.
 53. 9.99.
 54. 10.45.
 55. 10.29.
 56. 10.32.
 57. 10.20.
 58. 10.21.
 59. 10.30. Bull's mouth open.
 60. 10.02.
 61. 10.49. As 59, but bull with lowered head, butting.
 62. 9.89. As 61.
 63. 10.45. As 61.
 64. 10.24. As 61.

Half staters

Obv.: Lion forepart leaping r. and bull forepart rushing l.

Rev.: As before.

65. 4.97. *Obv.* style similar to stater 16. Die possibly intended for a third-stater.
 66. 5.16. Similar to 65, but normal die.
 67. 5.40. Similar to 66.
 68. 5.41. Style of staters 18-42.
 69. 5.37. As 68.
 70. 5.15. As 68.
 71. 4.90. As 68.
 72. 4.84. As 68.
 73. 5.31. As 68.
 74. 5.25. As 68.
 75. 4.95. As 68.

76. 5.06. As 68.
 77. 5.31. As 68.
 78. 5.04. As 68.
 79. 5.13. As 68.
 80. 4.97. As 68.
 81. 4.95. As 68, but bull with prominent dewlap.

It must be admitted that there are some very strange aspects to the style of these coins. It is, of course, possible that the stranger styles represent contemporary imitations. Aryandes, satrap of Egypt (Herodotus 4.166), is known to have struck Darics in silver during the reign of Darius I. However, such an idea should be rejected until a full study of the coinage has been made. The very coarse designs (Nos. 49-64) appear to have no parallel on coins, but they do reflect contemporary styles of cutting on late archaic gems.¹⁸ The back of the bull is often rounded to balance that of the lion, instead of with a straight truncation which is normal on previously published pieces. The hairs standing up from the back of the lion's mane are rarely present. The reverses appear more coarsely cut, and the obverses of the half staters are of much finer style than is normal. They certainly do not belong to the groups which are found in the hoards of the early fifth century B.C. All of this must urge caution in treating the evidence of this find, and a final solution will only come after a full die study of all relevant material. In the meantime, if these coins are to be placed in the relative sequence of this coinage at Sardis, it must be assumed that they belong at the very beginning. The style of the rare thirds, sixths, and smaller fractions of this coinage¹⁹ is close to that of the half staters of this hoard. This may be unusual for later half staters, but it must underline that our present knowledge of this series, particularly of the source of extant specimens, is so limited, and the material is so scattered, that we cannot discount the possibility that this hoard is providing a relatively large amount of material for a period of coinage from which very few extant examples have otherwise survived.

The fact that there are 243 different dies used in this hoard requires some explanation, although, linked with such other facts as can be ascertained, it helps to corroborate the authenticity of the coins. There is no obvious pattern of wear. Some coins display a flattening of details which could be attributed to weak striking or to corrosion, rather than to wear through circulation. It is probable that each die struck relatively few coins; but, more importantly, the original owner of the

¹⁸ As, for example, G. M. A. Richter, *Engraved Gems of the Greeks and Etruscans* (London 1968) fig. 195-196. The possibility that a gem engraver, unskilled perhaps in die engraving, should have been employed to cut dies at this date is entirely acceptable. A feature such as the two horns of the bull (Nos. 3, 4, and 22) is equally unusual, but may be paralleled by the bull's ears on electrum coins such as L. Weidauer *SNR* 60 (1981) pl. 1, 3. Cf. the plaque, *ibid.* pl. 2, 2.

¹⁹ For a list see Regling, *supra* n. 3, 112.

hoard must have received each piece at a different time over an extended period. Such a composition is less likely to have occurred in a single payment of one transaction.

The weights of the hoard coins are also on the light side, but not significantly so. Indeed, this may be expected as a result of the heavy corrosion which has already been noted to have affected the surface of the coins. The weight pattern is set out with a comparative list of the half staters from the publication of the Çal Dağ hoard,²⁰ and staters from Naster's and Regling's lists.²¹

<i>Naster</i>	<i>Regling</i>		<i>Ödemiş hoard</i>		<i>Çal Dağ hoard</i>	
			staters	half staters		
					5.50 g.	4
2		10.80 g.	1	3	5.40	94
15	2	10.70		3	5.30	105
12	6	10.60		2	5.20	9
8	3	10.50	8	2	5.10	
6	3	10.40	5	5	5.00	
8	3	10.30	15	1	4.90	
4	2	10.20	13	1	4.80	
1	1	10.10	8			
		10.00	8			
		9.90	5			
		9.80				
		9.70	1			
	1	9.60				
		9.50				
1	1	9.40				
1		9.30				

The group recorded in Athens in 1962 (PLATE 33, A-E) fits into the same pattern: A 10.57 g. B 10.50 g. C 10.31 g. D 10.92 g. E 5.29 g. These coins corroborate the new find in showing the circulation together of staters and half staters of this style. The coins did not display heavy silver chloride or serious corrosion, and it is to be noted that their weights fit into the top end of the scale.

There is a complete stylistic break with the electrum coinage that preceded this series. The hoard does provide certain pieces, hitherto apparently unpublished, which stand out in the sequence, and which do allow some comparison with the earlier electrum coinage. No. 1 is similar in design, but is completely different in

²⁰ S. P. Noe, *ANSNM* 136 (1956) 42.

²¹ Regling, *supra* n. 3, 111 and *Actes du 8^{me} Cong. Int. Num.* 1973 (Paris-Bâle 1976) 128-129. It should be stressed that in 1973 the weights of only 58 staters could be recorded.

style from its electrum counterparts;²² but nos. 2 and 3 may be compared with the electrum lion foreparts of a somewhat similar knobby style.²³ The earlier lion head electrum thirds of Sardis, however, with their square proportions and linear treatment, are very different.²⁴ This change in style is no more obvious in the coins of this hoard than in other extant specimens;²⁵ but it must be added to the evidence outlined elsewhere in this essay to underline that the gold and silver coinage of this type was more probably struck after the fall of the Lydian royal house than in the lifetime of Croesus. The change in style could reflect a change in the artistic milieu of the engravers, and thus reflect the political change after 547 B.C. This dramatic change in the coining medium which was to herald the glorious coinage of the Greek world and was to lead ultimately to the coinage that we use today, does not seem to have been brought about by the Lydian king whose wealth was proverbial, but perhaps by some anonymous Persian civil servant at Sardis who realized the potential that the new medium could have in payments of all kinds.

²² Weidauer, *supra*, n. 18, pl. 1, 4-5.

²³ Weidauer, *supra*, n. 10, pl. 7, 57-58.

²⁴ *Ibid.*, pl. 1, 8-10.

²⁵ There is one small group of Croesid gold staters, as S. W. Grose, *Fitzwilliam Museum McClean Bequest III*, pl. 302.3 which displays a peculiar linear style not paralleled in this hoard. It is in some ways closer in style to the earlier electrum of Sardis, particularly to that signed by Walwel (Weidauer, *supra* n. 10, pls. 11-12). This group does stand stylistically between the Sardis electrum and the coins of this hoard. I see the signed electrum issues coming towards the end of the Sardis series, both on typological and on stylistic grounds. It would seem to mark the end of the triangular eye and the fishbone hair at the side of the lion's jaw. Weidauer, *supra* n. 18, does not agree.



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33



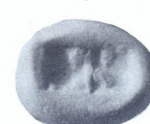
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48



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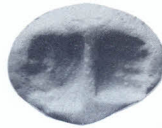
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72



73



74



75



76



77



78



79



80



81



A



B



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D



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